

S-Bahn Zentralschweiz

RIVET GAMES

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S-Bahn Zentralschweiz Overview

Introducing S-Bahn Zentralschweiz

The Central Switzerland S-Bahn project was introduced in 2004 to bring together the various regional lines around Luzern and Zug into a more centrally orientated commuter network, the heart of which is Luzern Railway Station. The network was broken up into many different lines, and the S1 traverses the rails of the former Oltern-Luzern railway, which dates back to 1856. Today the line is as important as ever, serving as a commuter corridor linking together the towns within the canton of Luzern.

You'll experience the busy commuter travel on the Luzern -Sursee route with the sleek and modern RABe 523 EMU in SBB livery. It's up to you if you decide to run an S1 commuter service calling at all stations or the regional-service to Olten, only stopping a few times.

To add to the challenge, turn on ETCS (European Train Control System). Choose from different supervision levels and experience a new safety system, which has its debut in Train Sim World 2 with this route. Learn more about ETCS below or in the in-game tutorials.



Route Map & Points Of Interest



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Game Modes

Journeys

Blends together more than 24 hours of sequential gameplay. Start a Journey and enjoy hundreds of scenarios, timetabled services, and jobs to complete around the railway.

Training

Training modules give you the knowledge you need to get the most from your locomotives and trains via interactive lessons that teach you key concepts. If you're new to Train Sim World, we recommend you start here to learn the fundamentals.

Scenarios

Scenarios are objective-based activities which provide unique experiences. Move coaches around, drive passenger services and experience some of the operations that occur on the route.

Timetables

These provide a host of activities throughout an entire 24-hour time period; There's always something to do with a large variety of services to take control of or ride along with. Sit back and enjoy the action and capture amazing screenshots, hop on or off and ride along with the various services as they go about their duties or take control and carry out the duties yourself. Featuring many individual services, you'll always find something going on.





Introducing The SBB RABe 523

The SBB RABe 523 is a 4-car Electric Multiple Unit (EMU) that operates passenger services throughout Switzerland. It belongs to the Stadler FLIRT family - with FLIRT being an abbreviation for Fast Light Intercity and Regional Train. The train was first introduced into Switzerland in 2004 and became a worldwide success for its manufacturer.

The RABe 523 is a 4 car unit, powered by 15 kilovolts of alternating current provided by overhead lines and with rapid acceleration its maximum speed comes in at 160 km/h (99 mph). Take over this modern and sleek EMU in our Luzern -Sursee route and enjoy the busy traffic along the line.



The Driver's Cab: Left View

	Name	Description
4	Train Air Brake Lever	The Train Air Brake is used to slow and stop the train.
8	Brake Pipe & Main Reservoir Gauge	Analogue display for the Brake Pipe and Main Reservoir pressure (bar).
9	Brake Cylinder Gauge	Analogue display for the brake cylinder pressure (bar).
10	Wiper Switch	Operates the front window wipers. It has four settings: Off, Slow, Medium, and Fast.
11	Door Buttons	Opens and closes the passenger doors. The two yellow buttons open the passenger doors on the selected side.
12	Sander Button	Applies sand to the wheels to increase traction. This should only be used in low adhesion weather conditions.
13	Wheel Slip Indicator	This indicator will illuminate if any of the axles lose traction.
14	Gauge Instrument Dimmer	Will brighten / dim the gauge instrument lighting.
15	Display Instrument Dimmer	Will brighten / dim the digital displays.
16	Passenger Information Terminal	Sets the destination displays both externally and internally throughout the train. More on this on page 18.
17	Emergency Brake	Used to stop the train as quickly as possible in an emergency situation only.



The Driver's Cab: Centre View

	Name	Description
1	Master Key	The Master Key unlocks the Reverser. The key can only be locked or unlocked with the Reverser and throttle in the neutral positions.
2	Throttle & E-Brake	Controls the level power. Is applied when pushed forward and controls the e-braking level when pulled backwards. (Power and e-braking levels are zero when the lever is centered)
3	V-Soll Lever	Limits the top speed of the train.
5	Reverser Lever	Sets the direction of travel.
6	Pantograph Lever	Raises and lowers the pantograph.
7	Horn Switch	Has two tones: High tone and low tone.
18	ETCS Indicator	Will illuminate to indicate that either Level 0 or Level 1 is currently active.
19	Wing Mirror Pedal	Opens / closes the wing mirrors.
20	Centre Display	Displays information about the current train status including speed, ETCS modes and target speeds, and indicates if any passenger doors are currently open.
21	Right Display	Displays information including tractive effort, line voltage level, system mode status and provides a secondary speedometer.
22	Line Volts Gauge	Analogue display for the line voltage the train is currently receiving from the overhead wires.
23	Tractive Effort Gauge	Analogue display for how much tractive effort or braking force the train is applying.

15:26:04

(19)

The Driver's Cab: Right View

	Name	Description
18	ETCS Indicator	Will illuminate to indicate that either Level 0 or Level 1 is currently active.
21	Right Display	Displays information including tractive effort, line voltage level, system mode status and provides a secondary speedometer.
23	Uncouple Unit Buttons	These buttons are used to uncouple multiple units in a train formation.
24	Headlights Emergency Button	Switches the main headlights to red.
25	Headlights Off Button	Switches the main headlights off.
26	Marker Lights Button	Switches the main headlights off and turns on the marker lights.
27	Parking Mode Button	Used when switching cabs.
28	Train Light Buttons	Turns the train passenger lighting on and off throughout the train.
29	Air Brake Indicator	Will illuminate to indicate that the air brake is currently applied.
30	Handbrake Buttons	Used to apply and release the handbrake.
31	Foot Heater Buttons	Used to control cabin heating.
32	Cab Light Button	Controls the overhead cab lighting.



The Driver's Cab: Extras

	Name	Description
	Name	Description
19	Wing Mirror Pedal	Opens and retracts the wing mirrors.
33	Front Windscreen Blind	Controls cabin glare.
34	Right Windscreen Blind	Controls cabin glare.
35	Right Window Blind	Controls cabin glare. The window has to be closed to operate this blind.
36	Right Window	Opening window.
37	Chair Height Adjustment Lever	Adjusts the height of the driver's seat.

34, 35 and 36 also apply to the left side of the cab.





Getting Started

- 1. Enter the cab you will be driving in, sit in the driver's seat and check the following:
 - a. Master Key is On.
 - b. Reverser Lever is set to Forward.
 - c. Train Brake Lever is set to Release.
 - d. Check that the V-Soll Lever is set to the desired speed.
- 3. If you wish to run with ETCS STM mode enabled:
 - a. Make sure the train is at a standstill.
 - b. Press the ETCS STM button located on the right display.
- 4. If you wish to run with ETCS Level 0 enabled:
 - a. Make sure the train is at a standstill.
 - b. Press the ETCS Level 0 button located on the right display.
 - c. Press the Enter Key on the Right Display to acknowledge ETCS Level 0 is currently active.

- 1. If you wish to run with ETCS Level 1 enabled:
 - a. Make sure the train is at a standstill.
 - b. Press the ETCS Level 1 button located on the right display.
 - c. Press the Enter Key on the Right Display to acknowledge ETCS Level 1 is currently active.
- 2. To cold start the train, sit in the driver's seat and check the following:
 - a. Master Key is on.
 - b. Pantograph is raised.
 - c. Digital displays are turned on. (Button is located on the Right Display).
 - d. Reverser Lever is set to forward.
 - e. Train Brake Lever is set to Release.
 - f. Check that the V-Soll Lever is set to the desired speed.

On-Board Systems: Brakes

The RABe 523 comes with two separate braking systems: Train Air Brake and an Electric Brake which is controlled using the same combined lever that controls the throttle.

Train Air Brake

The train air brake consists of 4 sections:

Release

As it suggests this position releases the brakes throughout the train.

0% -> 99%

This variable lever range determines how much air brake will be applied to the train.

Full Service

Applies the maximum amount of air brake pressure to the train.

Emergency

Trips a full emergency application of the train brakes and exhausts all of the brake pipe pressure.

Electric Brake

The e-brake uses the traction motors of the train to convert kinetic energy (motion) to electricity and thus reduces the speed of the train. The slower the train is travelling the less effective this braking effect will be. This brake consists of 3 sections:

0% -> 99%

This variable lever range determines how much e-brake is used to slow down the train.

Max Brake

Applies the full amount of e-brake possible to the train.

Emergency

As well as applying the full amount of e-brake to the train, it also applies the emergency air brakes.

On-Board Systems: V-Soll Lever

The RABe 523 is equipped with automatic speed control. The desired maximum speed for the line ahead should be selected using the V-Soll Lever and this will be indicated by the moving V-Soll Speed Indicator on the Speedometer. Speed selection can be made in 5 km/h increments from 5 to 160 km/h.

This system makes use of the power provided by the driver's throttle selection and cannot exceed this level. The driver must gradually increase the throttle when starting to move the train.

As it is a core feature of this train, this system is on by default and cannot be turned off.

When initialising the train systems, the V-Soll Speed Indicator will automatically be set to 40 km/h.



On-Board Systems: Passenger Info System

The Passenger Information System (PIS) terminal in the driver cabin operates the external destination boards and the internal display screen.

The PIS terminal has the functionality to:

- Enter a three-digit code to select a specific destination.
- Backspace / clear the code entry.
- Cycle through the destinations using the "Next" and "Previous" buttons.

The table on the right contains the list of destinations, their service number e.g. "S1" and their corresponding numeric codes.

The PIS terminal can be operated by entering the threedigit code then pressing the "Enter" key to set the desired destination.

Alternatively, the "Next" and "Previous" keys can be used to cycle through the list of destinations.

If a mistake is made simply use the "Backspace" key to remove the last digit entered in to the terminal. If the whole number is wrong, then use the "Clear" button to delete the whole entry.

	Route	Destination Numeric Code
	Geschlossen	201
S1	Sursee	202
S 3	Arth-Goldau	203
S 3	Erstfeld	204
S24	Zürich Hb	205
S1	Rothenburg	206
S1	Rotkreuz	207
RE	Basel SBB	208
S1	Emmenbrücke	209
S1	Gütsch	210
S1	Luzern	211
S1	Olten	212
S1	Baar	213
S 7	Langenthal	214
S9	Lenzburg	215
S99	Hochdorf	216
	Geschlossen	217
	Blank	218

ON-Board Systems: Passenger Info System

	Name	Description
41	Numeric Pad	These numbers are used to enter the three-digit numeric code for the destination display
42	Backspace Key	Used to delete the last digit entered in to the terminal
43	Enter Key	Used to set the destination display with a three-digit numeric code
44	Clear Key	Clears the whole three-digit numeric code
45	Next Key	Cycles to the next destination in the list
46	Previous Key	Cycles to the previous destination in the list
47	Destination Display	This is where the current destination displayed throughout the train is shown





European Train Control System (ETCS)

European Train Control System (ETCS) is an extensive safety system that focuses on monitoring the driver's performance. There are several different levels to ETCS and they differ because of the trackside requirements and means of data transmission. Installed on our TSW RABe 523 are the following 3 levels:

ETCS STM

This level covers the case of a train equipped with ETCS on-board sub-system running on a route that only runs the national safety systems. STM will provide the same supervision capability as the national systems. Currently for this route only Integra-Signum has been added to STM. More on Integra-Signum can be found on the next page.

ETCS Level 0

At this level, the driver still relies on external track-side signals and the on-board equipment only monitors speeds over 100 km/h.

ETCS Level 1

Level 1 makes use of balises on the track to transmit data to the train. The information consists of speed changes, signal restrictions and other railway signage on the route. This is displayed on the digital screen in the middle of the cab so the driver can see clearly what is coming up. Level 1 has two separate modes to it:

Staff Responsible

When Level 1 is activated it will start off in "Staff Responsible" mode. In this mode the drive is limited to 40 km/h until they pass a balise for the initial data transfer.

Full Supervision

Once the train has passed the initial balise Level 1 will then enter "Full Supervision" mode. In this mode the speed of the train is constantly monitored and balises will pass information to any incoming reductions of speed. When a reduction of speed has been sent to the train an audible warning will sound and the driver will then have to follow a braking curve which will bring the train to the correct speed before the speed restriction commences.

European Train Control System (ETCS)

	Name	Description
61	Speedometer	Digital display of the speedometer.
62	Line Volts	Digital display for the line voltage the train is currently receiving from the overhead wires.
63	Tractive Effort	Digital display of the Tractive Effort the train is currently producing.
64	Battery	Digital display of the battery power the train currently has.
65	Level STM	Button for activating ETCS Level STM.
66	Level 0	Button for activating ETCS Level 0.
67	Level 1	Button for activating ETCS Level 1.
68	Acknowledge	Button for acknowledging that ETCS Level 0 or 1 has been activated
69	Display Power	Button for turning on / off digital displays
70	Display Brightness	Button for different sets of brightness for the digital displays
71	Display Contrast	Button for different sets of contrast for the digital displays.



European Train Control System (ETCS)

	Name	Description
51	Speedometer	Digital Speedometer that also changes colour in line with ETCS.
52	ETCS Level Indicator	This is where the current ETCS Level will be displayed.
53	ETCS Mode Indicator	This is where the current ETCS Mode will be displayed.
54	ETCS Release Speed	This is where the current ETCS Release Speed will be displayed.
55	Braking Distance Indicator	This is where the current braking distance will be displayed in the form of a bar.
56	Integra Signum Warning Indicators	If there is an Integra warning the left indicator will illuminate. If the Integra Signum emergency braking activates the right indicator will illuminate.
57	Train Length Indicator	This is where the current train length is displayed.
58	Passenger Doors Indicator	These indicators will light up depending on which passenger doors are currently open.
59	Clock	This is where the current time of day is displayed.



Integra Signum (ZS)

You are alerted by the Integra safety system when you pass a distant signal (Vorsignal) that is displaying a warning. The safety system acknowledge lamp will illuminate yellow accompanied by an audio tone. You must turn the acknowledge switch immediately to the right otherwise the emergency brakes will be applied automatically. Once pressed there will be six further lamp flashes and two audio beeps to remind you that you are driving under a distant signal caution. An Integra safety system alert will also be activated when you pass a main signal (Hauptsignal) displaying Aspect 6 (Short Journey – Expect Obstruction).



5 Swiss Railway Signalling Guide

Swiss Railway Signalling: The L-Type System



The signal shown on the left is a typical main signal (Hauptsignal) that is currently displaying a Proceed aspect. The components of this signal are as follows:

Main Signal head advises of the state of the line ahead. In this case, the head is advising that the maximum permissible speed from this point is the current line speed advised by the lineside signs.

Brake Test/Departure Indicator is used by the ground staff to communicate with the driver the status of a brake test and when the train is ready for departure.

Identification plate provides the signal's unique number.

Co-acting Ground Shunt Signal when mounted alongside a main signal such as in this example, works in conjunction with the main signal head but otherwise generally provides movement authority for shunting purposes. See page 29 for more information on Shunt Signals.



The signal shown on the left is a typical distant signal (Vorsignal).

Unlike main signals that indicate the permissible speed from this point, distant signals provide advanced warning of the aspect of the next main signal along the line.

Warnings of restrictive aspects ahead also provide Integra Signum train protection alerts.

The components of this signal are as follows:

Distant Signal head advises of the state of the next main signal ahead.

Identification plate provides the signal's unique number. A single star symbol identifies this signal as a distant signal.

Swiss Railway Signalling: The L-Type System





Main signal heads and distant signal heads when mounted to a single post, as shown on the left, are referred to as combined signals and are typically used where the signal blocks are relatively close together.

This signal is advising that the maximum permissible speed from this point is the current line speed advised by the lineside signs. It is also advising that the next main signal is displaying the same aspect.



In situations where visibility is restricted such as on tight curves or where bridges may obstruct the view, repeater signals are used to provide additional advanced warning of the state of the next main signal. They are situated between the main signal and the distant signal.

Twin star symbols on the signal identification plate identifies this signal as a distant repeater signal.

We'll continue with an overview of L-Type signal aspects and their meaning on the next page.

L-Type Signal Aspects

	Distant	Main	Meaning
0		0	You are not permitted to proceed beyond this signal, the route ahead is blocked. Preceding a main Stop aspect, a distant will provide the warning aspect shown.
1		1	Proceed, the line ahead is clear. Observe the maximum permissible speed limits displayed on lineside signs.
2		2	Proceed at no greater than 40 km/h from the main signal, the line ahead is clear but a reduced maximum permissible speed applies.
3		3	Proceed at no greater than 60 km/h from the main signal, the line ahead is clear but a reduced maximum permissible speed applies.
5		5	Proceed at no greater than 90 km/h from the main signal, the line ahead is clear but a reduced maximum permissible speed applies.
6		6	Caution, proceed at no greater than 40 km/h, the line ahead may be obstructed. A main signal displaying this aspect will activate the Integra Signum safety system which must be acknowledged.

Ground Shunt Signals & Shunt Indicators

Ground signals are normally mounted on short posts at or around ground level. However at stations they are sometimes mounted below the platform canopy.

When they are located alongside a main signal they co-act and repeat the appropriate aspect according to the aspect the main signal is displaying.

The possible aspects and their meanings are shown below:

Aspect	Meaning
	You are not permitted to proceed beyond this signal, the route ahead is blocked.
	Caution, the next main signal or shunt signal is displaying a stop aspect or you are entering a siding / end of line.
	The next signal is displaying a proceed aspect.



Swiss Railway Signalling: The N-Type System



The signal shown on the left is a main signal (Hauptsignal) as indicated by the white circle surround. It is currently displaying a proceed aspect. N-Type main signals can also display distant aspects. The components of this signal are as follows:

Identification plate provides the signal's unique number.

Main signal head advises the state of the line ahead. In this case, the head is advising that the maximum permissible speed from this point is the current line speed advised by the lineside signs.

Dot-matrix display. Not illuminated in this example.

Brake Test/Departure Indicator is used by the ground staff to communicate with the driver the status of a brake test and when the train is ready for departure.

Co-acting Ground Shunt Signal when mounted alongside a main signal such as in this example, works in conjunction with the main signal head but otherwise generally provides movement authority for shunting purposes. See page 29 for more information on Shunt Signals.







The components of this signal are as follows:

Identification plate provides the signal's unique number.

Distant signal head in conjunction with the dot-matrix display below advises the state of the next signal ahead. This example advises that a 70 km/h speed restriction commences at the next signal ahead.

A yellow aspect combined with a number is a speed restriction warning.

The dot-matrix display shows the speed warning divided by ten (70 km/h / 10 = 7).

If the signal shows a yellow aspect without a numerical digit then the next signal is at danger.

Swiss Railway Signalling: The N-Type System



The main signal shown on the left is displaying the commencement of a 70 km/h speed restriction.

A green aspect combined with a number is a speed restriction commencement.

The dot-matrix display shows the speed commencement divided by ten (70 km/h / 10 = 7).



In situations where visibility is restricted such as on tight curves or where bridges may obstruct the view, repeater signals are used to provide additional advanced warning of the state of the next main signal. They are situated between the main signal and the distant signal.

Distant repeaters can easily be identified because their heads have an additional sign with two stars.

We'll continue with an overview of N-Type signal aspects and their meaning on the next page.

N-Type Signal Aspects

	Distant		Main	Meaning
	or			You are not permitted to proceed beyond this main signal, the route ahead is blocked. Preceding a main stop aspect, a distant will provide an appropriate warning.
	or			Proceed, the line ahead is clear. Observe the posted maximum permissible speed limits displayed on lineside signs.
• 7	or	•) 7	<u>)</u> 7	Proceed at no greater than 70 km/h from the main signal, the line ahead is clear but a reduced maximum permissible speed applies which is shown by the dot-matrix display x 10 km/h (here 70km/h).
• 4	or	● 4		Proceed at no greater than 40 km/h from the main signal, the next signal is at stop and closer than normal stopping distance (dot-matrix display is flashing).
• 4	or	• 4		Proceed at no greater than 40 km/h from the main signal, the next track section is occupied and the driver must be ready to stop the train before the obstruction.



Swiss Railways Signs

In addition to signals, railway signage also plays an important part of advising the driver on the route conditions ahead. Below are explanations of each sign you will find on the route:

Sign	Meaning	
30	Maximum permissible speed applies from the next speed restriction commencement sign. You must reduce speed to the value shown.	
30 45	Maximum permissible speed can also be indicated using differential signs. The higher speed applies to passenger trains, the lower speed applies to freight trains.	
	Speed restriction commencement sign advises that you should have reduced speed by this point. Proceeding beyond this sign at a speed higher than previously advised is not permitted.	
	End of speed restriction advises that you can proceed at the previous line speed once the rear of the train has passed this sign.	
30 30 45	Increase speed to the value shown on the sign once the rear of the train has passed the sign. On differential signs, the higher speed applies to passenger trains.	





Dovetail live

The Dovetail Forums are your one-stop destination for everything Train Simulator and Train Sim World related. We have an ever growing and vibrant community of train enthusiasts from all over the world, ranging from experienced railroad veterans to new players getting into the world of train simulation. So, if you haven't already, why not sign up for an account today and join our community – we'd love to have you on board!

See more at: https://forums.dovetailgames.com

Dovetail Live is an online destination which enables players to interact with Dovetail's products and each other in an environment tailored specifically to fans of simulation entertainment. Dovetail Live will evolve to become central to Train Sim World®, enriching the player experience in every way from offering rewards, building a community of likeminded players and helping every player find the right content to create their own perfect personal experience.

Signing up for Dovetail Live is completely voluntary. However, users that do sign up for it will receive exclusive benefits in the future.

See more at: https://live.dovetailgames.com

Troubleshooting Guide & How To Get Help

I have a problem downloading the Steam client, how do I contact them?

You can contact Steam Support by opening a customer service ticket at **https://support.steampowered.com**. You will need to create a unique support account to submit a ticket (your Steam account will not work on this page) and this will enable you to track and respond to any tickets you open with Steam.

How do I change the language of Train Sim World 2?

This is an easy process and will allow you to play Train Sim World in English, French, German, Spanish, Russian and Simplified Chinese. To change the language of Train Sim World, double-click on the Steam icon on your PC desktop, left click on 'Library', right click on 'Train Sim World', left click on 'Properties', and finally left click on the Language tab and select your preferred language.

How do I reset my display screen size settings?

It is possible to change the display screen size settings for Train Sim World from within the game. Changing display screen size settings is done from the Settings menu in the Display tab. For any questions not covered here, visit our knowledgebase at https://dovetailgames.freshdesk.com

About Rivet Games

Rivet Games is a team of passionate and talented artists and developers based in Stirling, Scotland. Building on years of prior experience of developing the highest quality routes and models for Train Simulator and Train Sim World, the team have a passion for ensuring everything they do is accurate, built to the highest possible standards, and above all, is fun and enjoyable.

For more information about Rivet Games and to find out more about how they work, please follow them on social media:

> www.rivet-games.com youtube.com/rivetgames instagram.com/rivetgames twitter.com/rivetgames facebook.com/rivetgame forums.rivet-games.com

The passion behind everything that Rivet Games does is delivered by the following individuals:

Adam Parsley Alan Thomson Alex Haining Alexander MacLeod Colin Macdonald Fraser Reid Greg Laskarzewski Hannah Davidson James Brettell Jasper Holzapfel Joshua Dutton Kaya Nunn Kevin Conaghan Kyle Carpio Laura McNaughton Lauren McKellan Lee Wallace Magda d'Andrea Matt Price Michele Brodie **Ronnie James** Ross Garrard Ross McCafferty Stewart Angus Tim Gatland

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